

**AFFIDAVIT OF SPECIAL AGENT ANDREW KIRK IN SUPPORT OF
AN APPLICATION FOR A SEARCH WARRANT**

I, Andrew Kirk, being duly sworn, depose, and state:

Introduction and Agent Background

1. I am a Special Agent with the Federal Bureau of Investigation (“FBI”) and have been so employed since July of 2019. I am assigned to one of the FBI’s Counterintelligence Squads in the Boston Field Office. Previously, I was employed as a Special Agent with the Air Force Office of Special Investigations. I worked in that capacity for six years. I have participated in numerous investigations, during the course of which I have interviewed witnesses, conducted physical surveillance, executed search warrants, and used other investigative techniques to secure relevant information regarding various federal crimes.

2. As detailed in my affidavit in support of a search warrant authorizing the search of a residence (the “Original SW affidavit”), *see* Search Warrant No. 19-mj-4554-DHH, which is attached hereto as **Attachment C** and incorporated herein by reference, I am currently investigating Zaosong ZHENG and others for smuggling goods from the United States, in violation of 18 U.S.C. § 554(a), and making false, fictitious and fraudulent statements in a manner within the jurisdiction of the Executive Branch of the United States, in violation of 18 U.S.C. § 1001(a)(2).

3. As described below and in Attachment C, based upon the evidence gathered to date in the ongoing investigation, I have probable cause to believe, and do in fact believe, that on December 9, 2019, ZHENG knowingly and willingly attempted to export from the United States, merchandise, articles, or objects, to wit: 21 vials of biological materials, contrary to laws or regulations of the United States in violation of 18 U.S.C. § 554(a). Additionally, I have probable cause to believe, that on December 9, 2019, ZHENG did knowingly and willfully make a series of

materially false, fictitious, and fraudulent statements to both Customs and Border Protection (CBP) Officers and Federal Bureau of Investigation (FBI) Agents, in violation of 18 U.S.C. § 1001(a)(2).

4. This affidavit is being submitted in support of an application for a warrant to search the following electronic devices, all of which were seized from ZHENG's residence during the execution of search warrant No. 19-mj-4554-DHH on December 17, 2019:

- a. A black iPhone model A1387, FCC ID BCG-E2430A;
- b. A 2 TB Seagate backup plus portable drive, bearing serial number NA77FD65;
- c. An iPad pro, 11 inch, 256 gigabyte, bearing serial number DMPZF7ABKD6L; and
- d. An iPhone S, Model A1700, silver in color, with Mandarin characters on the back of the phone which translate to "Designed by Apple in California Model number: A1700. Apple Inc. USA Made in China TD-LTE Digital Mobile Phone"

(collectively "the computer equipment"). The prior search warrant issued by this Court, Search Warrant No. 19-mj-4554-DHH, authorized the seizure of this computer equipment. I am now seeking a second warrant to search these specific electronic devices.

5. The computer equipment is in the possession of law enforcement investigators, as described in Attachment A. As described below and in Attachment C, I have probable cause to believe and do, in fact, believe that the devices contain evidence, fruits, and instrumentalities of the crimes listed above, as described in Attachment B.

6. The facts in this affidavit come from my personal observations and review of records, my training and experience, and information obtained from other agents and witnesses. This affidavit is intended to show merely that there is sufficient probable cause for the requested search warrant and does not set forth all of my knowledge about this matter.

Probable Cause to Believe That a Federal Crime Was Committed

7. In addition to the facts and information set forth in Attachment C, the affidavit submitted in connection with Search Warrant No. 19-mj-4554-DHH, the following facts establish probable cause to believe that a federal crime was committed:

8. ZHENG, a thirty-year-old Chinese citizen in the United States on a J-1 exchange visitor Visa, was a research scholar working conducting cancer research at Beth Israel Deaconess Medical Center (“BIMDC”). On January 21, 2020, a grand jury returned an indictment charging ZHENG making false statements to U.S. Customs and Border Protection (“CBP”) officers and smuggling in violation of 18 U.S.C. §§ 1001(a)(2) and 554(a), respectively.

9. On December 17, 2019, law enforcement officers executed a search warrant at ZHENG’s residence located at 400 Brookline Avenue, Apartment 8a, in Boston, MA. *See* Search Warrant No. 19-mj-4554-DHH. ZHENG’s roommate, Li Jialin (“Li”), was present at the residence for part of the search. Li was cooperative. Li told FBI special agents that he usually slept behind a curtain on one side of the apartment’s common living area, while ZHENG slept in the apartment’s sole bedroom. However, Li said that he recently moved into ZHENG’s former bedroom. Li told the FBI special agents that the items in the bedroom closet belonged to ZHENG. Li also showed the agents where ZHENG’s luggage was located. While searching ZHENG’s residence, FBI special agents located and seized the computer equipment. Based upon the information provided by Li, I believe all of these devices were used predominantly by ZHENG. These devices, along with the locations where they were found in the apartment, are as follows:

a. The black iPhone model A1387, FCC ID BCG-E2430A, was found in the bedroom closet in a clear plastic bin. As described above, ZHENG’s former roommate Li told agents that the items in that closet belonged to ZHENG;

b. The 2 TB Seagate backup plus portable drive, bearing serial number NA77FD65, was found in the bedroom closet in a clear plastic bin;

c. The iPad Pro, 11 inch, 256 gigabyte, bearing serial number DMPZF7ABKD6L, was found in a blue suitcase with ZHENG's name on the luggage tag. As described above, Li told agents that this suitcase belonged to ZHENG;

d. The silver iPhone S, Model A1700 was found on the desk in the bedroom. Li identified this as a standby cellphone that both he and ZHENG used.

10. On or about December 23, 2019, I and another FBI special agent interviewed Li. Li said that on December 8, 2019—the night before ZHENG was found in possession of the vials at Logan Airport—ZHENG went to Wei's lab after dinner to retrieve some lab samples. Li had previously told ZHENG that it was "illegal" to take samples from Wei's lab. According to Li, ZHENG told Li that other students had taken samples from the lab before and had not been caught. ZHENG was gone for approximately two hours after dinner on December 8, 2019. Li recalled that when ZHENG returned to the apartment on the evening of December 8, 2019, ZHENG put several items in the freezer and then got ready for bed. Li believed these items were samples that ZHENG had stolen from Wei's lab.

11. Additionally, during the interview, Li stated that on the morning of December 9, 2019, the day after ZHENG's late night trip to Wei's lab, at approximately 9:00 a.m., ZHENG and his wife, Zhu Wenjie, went to Logan Airport while Li remained at the apartment. According to Li, ZHENG's wife flew back to Maryland, but ZHENG missed his flight to China because he was stopped by U.S. Customs. ZHENG returned to the apartment between 10:00 and 11:00 p.m. When ZHENG returned, he (ZHENG) told Li that U.S. Customs had caught him trying to take "the cells" – Li understood ZHENG to be referring to materials ZHENG had taken from Wei's lab

– back to China. Li said that ZHENG then used either Li's computer or their “standby cell phone” to book another flight to China for the following day (December 10, 2019). Li described the “standby cell phone” as an extra silver iPhone they used at the apartment. Based upon this description, I believe that this is the same cell phone found on the desk in ZHENG’s old room when the FBI searched the premises (item d above).

12. Li also told the FBI special agents that on December 10, 2019, between 10:00 to 11:00 a.m., Li went with ZHENG to the airport in an Uber using Li's Uber account because ZHENG did not have his phone. Li waited with ZHENG’s luggage in the terminal while ZHENG went to retrieve his cell phone and computer from U.S. Customs. ZHENG never returned. Li waited until ZHENG’s flight departed. Li then called an Uber for himself and went back to the apartment, taking ZHENG’s luggage with him.

13. In addition, after ZHENG’s arrest on December 10, 2019, myself and other FBI special agents reviewed Zheng’s Huawei cell phone pursuant to a search warrant. *See* Search Warrant No. 19-mj-4555-DHH. Among other things, the phone contained numerous WeChat messages between ZHENG and Zhang Tao that are relevant to the ongoing investigation. In several of the messages, for example, ZHENG discussed taking research materials from Wei’s lab to bring back to China. The messages show that on or about July 25, 2019, ZHENG agreed with Zhang to replicate the research they were doing at Wei’s lab at Sun Yat-Sen Memorial Hospital, in China. The messages reflect that the research ZHENG planned to steal and replicate pertained to “OGT.” OGT (O-Linked N-Acetylglucosamine (GlcNAc) Transferase) is a protein coding gene. Wei had previously told agents that one of the projects ZHENG managed at his lab involved O-glycosytine, RIPK1 and OGA and how glucose deprivation could be an indicator or a way to stop cancer cells and inflammation.

14. Other WeChat messages on ZHENG's Huawei phone included conversations with his advisor in China, Wenlian Xie ("Xie"). In these messages Xie agreed to help support ZHENG and Zhang's research. Thereafter, ZHENG, Zhang and Xie purchased genetically modified mice¹ that were needed to replicate the experiment at Wei Labs. These mice were ordered from Jackson Lab and Shanghai Model Organisms.² Zhang and ZHENG agreed not to tell Wei about their project. Instead, they planned to publish an academic paper with Xie in China. According to the WeChat messages, all three would claim credit for any discoveries, giving no credit to Wei or his lab.

15. Finally, FBI Special Agents have reviewed ZHENG's MacBook Pro laptop computer pursuant to a search warrant. *See* Search Warrant No. 19-mj-4556-DHH. Among other things, the computer contained a folder titled "OGT." I have partially reviewed the contents of this folder. Among other things, it contained a PowerPoint presentation authored by Zhang titled "O-GlcNAcylation Mediates Inflammation and Necroptosis by Inhibiting RIPK1," which appeared to relate to at least some of the research ZHENG was conducting at Wei's lab. The items in the subfolders were created between on or about October 15, 2019 and December 6, 2019, during the time that ZHENG was employed at Wei's lab.

Investigators' Possession of the Equipment

16. The computer equipment is currently in the possession of the FBI, and is being

¹ A genetically modified mouse or genetically engineered mouse model (GEMM) is a mouse that has had its genome altered through the use of genetic engineering techniques. These mice can have a gene knock-out, so they do not express it. This can be useful for studying certain diseases like cancer or diabetes.

² Shanghai Model Organisms has established a series of genetically engineered mouse model R&D techniques ranging from gene cloning, transgene and gene knockout plasmid construction to mouse embryonic stem cell manipulation, microinjection, genetic breeding, genotyping, speed expansion, strain rederivation, embryo cryopreservation, phenotyping that they have made commercially available. They are headquartered in China.

stored at its facilities, as described in Attachment A. Investigators obtained the equipment by lawfully seizing it pursuant to a warrant executed on December 17, 2019. *See* Search Warrant No. 19-mj-4554-DHH.

17. Therefore, while the investigators might already have all necessary authority to examine the computer equipment, I seek this additional warrant out of an abundance of caution to be certain that its search will comply with the Fourth Amendment and other applicable laws.

**Probable Cause to Believe That The Equipment
Contains Evidence, Fruits, And Instrumentalities**

18. As described above, ZHENG used various electronic devices to communicate about his plan to steal and smuggle biological materials and research from Wei's lab for his benefit, and the benefit of others, in China. Specifically, based on the review of ZHENG's Apple MacBook Pro laptop computer, his silver USB flash drive, and his Huawei P30 Pro cellular phone (that is, the devices seized from ZHENG at Logan Airport), I have noted the following:

a. ZHENG used the WeChat application on his Huawei phone to discuss taking research from Wei's lab and other labs. He also used the application to discuss the status of his secret research project with colleagues at his lab in China.

b. ZHENG used the camera on his Huawei phone to take photographs of Wei's lab, to include pictures of its setup and the chemicals used in the lab. Similarly, I have observed some of these photos being sent to other contacts of ZHENG's, via WeChat.

c. According to WeChat's help center, a user's chat history can be backed up from a mobile device to a computer using WeChat for Windows. Additionally, WeChat users can download the application directly to Apple products like a laptop computer.

d. On ZHENG's MacBook I observed multiple folders containing research results

from experiments that ZHENG conducted at Wei Lab. Photos of research results were also found on ZHENG's silver USB drive. Moreover, I found order forms on the MacBook for materials ZHENG would need to replicate his work at Wei's lab back in China. These results and order forms were found in a folder titled "OGT," which was the project ZHENG and Zhang discussed stealing.

19. As discussed above, the computer equipment is currently being stored by investigators at their facilities as described in Attachment A. From my training and experience and the training and experience of law enforcement personnel who routinely handle this equipment, I understand that it has been stored in a manner in which its contents are, to the extent material to this investigation, in substantially the same state as they were when it first came into the investigators' possession.

20. From my training, experience, and information provided to me by other agents, I am aware that individuals frequently use computer equipment to carry out, communicate about, and store records regarding their daily activities. These tasks are frequently accomplished through sending and receiving e-mail, instant messages, and other forms of phone or internet based messages; scheduling activities; keeping a calendar of activities; arranging travel; purchasing items; searching for information including information regarding travel and activities; arranging for travel, accessing personal accounts including banking information; paying for items; and creating and storing images and videos of their movements and activities.

21. Based on my training, experience, and information provided by other law enforcement officers, I know that many smartphones (which are included in Attachment B's definition of "hardware") can now function essentially as small computers. Apple iPhones and Huawei phones like those seized from ZHENG are types of smartphone. Smartphones have

capabilities that include serving as a wireless telephone, digital camera, portable media player, GPS navigation device, sending and receiving text messages and e-mails, and storing a vast range and amount of electronic data. Examining data stored on devices of this type can uncover, among other things, evidence that reveals or suggests who possessed or used the device, and the location and movements of the person in possession of the device, among other things.

22. From my training, experience, and information provided to me by other agents, I am aware that individuals commonly store records of the type described in Attachment B in mobile phones, computer hardware, computer software, and storage media.

23. Based on my knowledge, training and experience, and information provided to me by other agents, I know that files on computers can be transferred in a variety of ways, such as with CDs, USBs, floppy discs, hard drives, etc. Moreover, Apple products can share files with other Apple devices via Wi-Fi or Bluetooth using a function called AirDrop. Similarly, files on Apple computers can also be saved to the iCloud, which is a cloud storage and cloud computing service from Apple. iCloud enables users to store data such as documents, photos, and music on remote servers for download to iOS, macOS or Windows devices, to share and send data to other users, and to manage their Apple devices if lost or stolen. Users can access the iCloud by logging into their iCloud account. Based on ZHENG owning multiple Apple devices, I have probable cause to believe, and do in fact believe, that information and files contained on his MacBook could be present on his other Apple products.

24. Based on my knowledge, training, experience, and information provided to me by other agents, I know that individual's backup the information on their phones on other electronic devices such as their computer. Individuals also back up information on their computers to stand alone hard drives as another way of protecting their information incase their computers are

damaged or destroyed. Furthermore, USB drives are often used to transfer smaller batches of information from one device to another.

25. Based on my knowledge, training, experience, and information provided to me by other agents, I know that data can often be recovered months or even years after it has been written, downloaded, saved, deleted, or viewed locally or over the Internet. This is true because:

a. Electronic files that have been downloaded to a storage medium can be stored for years at little or no cost. Furthermore, when users replace their electronic equipment, they can easily transfer the data from their old device to a new one.

b. Even after files have been deleted, they can be recovered months or years later using forensic tools. This is so because when a person "deletes" a file on a device, the data contained in the file often does not actually disappear; rather, that data remains on the storage medium until it is overwritten by new data, which might not occur for long periods of time. In addition, the device's operating system may also keep a record of deleted data in a "swap" or "recovery" file.

c. Wholly apart from user-generated files, electronic storage media often contains electronic evidence of how the device has been used, what it has been used for, and who has used it. This evidence can take the form of operating system configurations, artifacts from operating system or application operation; file system data structures, and virtual memory "swap" or paging files. It is technically possible to delete this information, but users typically do not erase or delete this evidence because special software is typically required for that task.

d. Similarly, files that have been viewed over the Internet are sometimes automatically downloaded into a temporary Internet directory or "cache." The browser often maintains a fixed amount of hard drive space devoted to these files, and the files are overwritten only as they are replaced with more recently viewed Internet pages or if a user takes steps to delete them.

e. In addition, based on my knowledge, training, and experience, I know that businesses and businesspeople often retain correspondence, financial, transactional, and other business records for years to identify past customers and vendors for potential future transactions; keep track of business deals; monitor payments, debts, and expenses; resolve business disputes stemming from past transactions; prepare tax returns and other tax documents; and engage in other business-related purposes.

CONCLUSION

26. Based on the information described above and in Attachment C, I have probable

cause to believe, and do in fact believe, that ZHENG has violated 18 U.S.C. § 554(a) and 18 U.S.C. § 1001(a)(2).

27. Based on the information described above and in Attachment C, I also have probable cause to believe, and do in fact believe, that evidence, fruits, and instrumentalities of these crimes, as described in Attachment B, are contained within the equipment described in Attachment A.

Sworn to under the pains and penalties of perjury,

/s/ Andrew Kirk

ANDREW KIRK
Special Agent, FBI

~~Subscribed and~~ sworn to me via telephone on July 2, 2020.

10:04 a.m.

David H. Kennedy
HONORABLE DAVID H. KENNEDY
United States Magistrate Judge

